UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/830,065	04/23/2004	Akira Kiyomura	024536-0143	8742

22428	7590	01/19/2006	EXAMINER

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ART UNIT	PAPER NUMBER
2855	

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/830,065	KIYOMURA ET AL.
	Examiner	Art Unit	
	Freddie Kirkland III	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 December 2005*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *4-6,8,9,14-16,18 and 19* is/are allowed.

6)☒ Claim(s) *1-3,7,10-13 and 17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

FINAL OFFICE ACTION

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created

doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

unjustified or improper timewise extension of the "right to exclude" granted by a patent

and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11

F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225

USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA

1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*,

418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be

used to overcome an actual or provisional rejection based on a nonstatutory double

patenting ground provided the conflicting application or patent is shown to be commonly

owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a

terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with

37 CFR 3.73(b).

Claims 1-19 are provisionally rejected under the judicially created doctrine of

obviousness-type double patenting as being unpatentable over claims 1-19 of

copending Application No. 10/830,054. Although the conflicting claims are not identical,

they are not patentably distinct from each other because the claims of the current

application are met as set forth in application 10/830,054. The calculation section, as

stated in the independent claims of the current application, calculates a correction value

for correcting said threshold based on data indicating an average correlation between

said diagnosis data and said threshold, to correct said threshold with said correction

value. Calculating a correction value for correcting the threshold, as stated in the

claims, is the same as repeatedly calculating the threshold value of the copending

application 10/830,054.

This is a <u>provisional</u> obviousness-type double patenting rejection because the

conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed

or described as set forth in section 102 of this title, if the differences between the

subject matter sought to be patented and the prior art are such that the subject

matter as a whole would have been obvious at the time the invention was made

to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negatived by the manner in which the invention was

made.

Claims 1-3, and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. U.S. Patent 5,862,507 in view of Lehner et al. U.S. Patent 6,584,834.

With respect to claims 1, 10 and 11, the Wu et al. reference teaches a misfire detection apparatus comprising: an operating condition detector for detecting engine operating conditions (figure 1 crankshaft sensor 38, col.6 lines 54-67); and a calculating section (figure 1, ECU 50) wherein said calculating section: calculates diagnosis data indicating a variation of said engine rotation speed (figure 3 signal processing block 74, col. 8 lines 62-66, the signal processing block extracts the average and fluctuation from the engine speed signal) and also calculates a threshold based on said engine operating conditions (figure 3 dynamic threshold block 88, col. 10 lines 36-61 the threshold and decision block estimates normal and misfire information and generates a dynamic threshold for misfire determination purposes), and judges whether or not a misfire occurred, based on a comparison between said diagnosis data and said threshold (col. 10 lines 58-61, comparison and decision block compares threshold to input which represents engine diagnosis data); and also calculates data indicating an average correlation between said diagnosis data and said threshold (figures 3 –7 and col. 10 lines 36-61, average engine speed diagnosis data from signal processing block 74 is compared to a dynamic threshold to determine if a misfire occurred); and judges whether said calculated diagnosed data becomes larger on average on the basis of said threshold (figures 3 –7 and col. 10 lines 36-61, average engine speed diagnosis data

from signal processing block 74 is compared to a dynamic threshold to determine if a

misfire occurred).

But Wu et al. fails to teach a calculation section that calculates a correction value

for correcting said threshold based on whether said calculated diagnosis data becomes

larger on average on the bases of said calculated threshold and correct the threshold.

The Lehner et al. reference teaches a method for detecting engine misfires

where a corrective value k is used to change the threshold based on engine operating

data (col. 4-5 lines 51 – 6).

Accordingly, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to have used the threshold correction method from the

Lehner invention in the device of Wu et al. in order to make the misfire detection less

sensitive to drive train fluctuations (Lehner et al. col. 4 line 62).

With respect to claims 2 and 12, the Wu et al. reference teaches a calculating

section calculates a ratio between an average value of said diagnosis data (averaged

diagnosed data input into dynamic threshold and decision block 88 from signal

processing block 74) and an average value of said threshold (the dynamic threshold is

determined from averaged data, therefore since this process is continuously running the

threshold is also averaged), as said data indicating the average correlation (the

comparison and decision block in figure 7 gives a continuous comparison between

threshold and averaged diagnosed data).

With respect to claims 3 and 13, the Wu et al. reference teaches comparing the

average diagnosed data and threshold values, met as set forth in claim 2, but fails to

teaches a calculating an average value of ratios between said diagnosis data and said

threshold, as said data indicating the average correlation.

Nevertheless it would have been obvious to one of ordinary skill in the art at the

time the invention was made to have averaged the ratios between the diagnosed data

and thresholds because the modification would enhance system accuracy.

Claims 7 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Wu et al. U.S. Patent 5,862,507 in view of Lehner et al. U.S. Patent 6,584,834. as

applied to claims 1 and 11 above, and further in view of Tomisawa U.S. Patent

5,507,180.

With respect to claims 7 and 17, the Wu et al. in view of Lehner fails to teach a

calculating section that cancels the misfire judgment based on said data indicating the

average correlation between said diagnosis data and said threshold.

Tomisawa teaches a misfire detection system where a second comparison (step

9) is used to determine whether or not there are rough road conditions. If there are

rough road conditions then don't determine that there was a misfire, and if there aren't a

misfire determination can be made (figure 3).

Accordingly it would have been obvious to one of ordinary skill in the art at the

time the invention was made to use the second comparison from the Tomisawa

teaching in the teaching of Wu et al. in order to eliminate erroneous values or detections

from the misfire detection method so that the method is more accurate (Tomisawa col. 1

lines 66-77 and col. 2 lines 1-4).

Response to Arguments

Applicant's arguments filed 12/7/05 have been fully considered but they are not persuasive.

The applicant argues that Lehner does not apply a corrective coefficient to the threshold and that although Lehner teaches adjusting a threshold value, Lehner fails to teach a threshold value that is corrected with a corrective value that is calculated based on calculated diagnosed data. The calculated diagnosed data is data indicating variation of engine speed. Lehner teaches correcting the threshold based on the ignition angle. The ignition angle calculated from the engine speed N (Lehner col. 2 lines 40-65 col. 3 lines 1-27), therefore the threshold I correction is dependent on engine speed.

Allowable Subject Matter

Claims 4-6, 8, 9,14-16, 18, and 19 are allowable over the prior art.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Freddie Kirkland III whose telephone number is 571-272-2232. The examiner can normally be reached on Monday through Friday 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FKIII
1/18/06

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